



impaired state of health. Large contends that Melberg conducted a comprehensive lost future wages evaluation and that Mobile Tool's objection goes to the weight of the testimony, not to its admissibility.

Under the Federal Rules of Evidence, expert testimony is not automatically admissible. Rather, its admissibility is governed by Fed.R.Civ.P. 702 and well-established Supreme Court precedent. In the seminal case of Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993), the United States Supreme Court reinforced the trial court's role as the "gatekeeper" for expert evidence. In initially screening such evidence, trial courts are required to determine the relevance and the reliability of any such proffered expert opinion. Id. at 592-93; Kuhmo Tire Co., Ltd. v. Carmichael, 526 U.S. 137, 147 (1999).

Thus, the court's task as gatekeeper to the entry of proposed expert testimony is to employ a three-step analysis: (1) the witness must be qualified "as an expert by knowledge, skill, experience, training, or education," Fed. R.Evid. 702; (2) the expert's reasoning or methodology underlying the testimony must be scientifically reliable; and (3) the testimony must be relevant – that is, it must assist the trier of fact to understand the evidence or to determine a fact in issue. Fed.R. Evid. 702; Daubert, 509 U.S. at 592-93. The party seeking to offer expert testimony "has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence." Fed.R.Evid. 702 Advisory Committee's note, 2000 Amendments P1 (interpreting Fed.R. Evid. 104(a)); Bradley v. Brown, 852 F. Supp. 690, 697 (N.D. Ind. 1994). aff'd, 42 F.3d 434 (7<sup>th</sup> Cir. 1994).

Evidence is reliable only if it is "genuinely scientific, as distinct from being unscientific speculation offered by a genuine scientist." Rosen v. Ciba-Geigy Corp., 78 F.3d 316, 318 (7<sup>th</sup>

Cir. 1996). In assessing the reliability of an expert's opinion, the focus is on the expert's methodology, not his or her conclusions. Smith v. Ford Motor Co., 215 F.3d 713, 718 (7<sup>th</sup> Cir. 2000). The judge must look behind the expert's ultimate conclusion and analyze the adequacy of its foundation. Mid-State Fertilizer Co. v. Exchange Nat'l Bank of Chicago, 877 F.2d 1333, 1339 (7<sup>th</sup> Cir. 1989). Expert opinion that is speculative is inadmissible. Loeffel Steel Products, Inc. v. Delta Brands, Inc., 387 F. Supp.2d 794, 817 (N.D. Ill. 2005).

As this court noted at the November 8, 2007 hearing, the issues raised by Mobile Tool with respect to Melberg's proposed testimony are issues for cross-examination at the time of trial. It is clear that Melberg has some basis for his opinions, and there is nothing to indicate that the opinions are not reliable. If Mobile Tool believes that the opinions are not based on sound facts, it may point that out to the jury at trial. It is worth noting here that the information to be presented about lost future wages and the earning capacity of Mr. Large are not particularly difficult. The average juror is familiar with how wages are determined and it is readily understood that wages tend to increase to keep pace with the inflation rate. Thus, this is not an instance where a jury is likely to be misled by the information presented by Mr. Melberg. Accordingly, the motion to exclude the testimony of Mr. Melberg will be denied.

The court will next turn to Mobile Tool's motion to exclude the expert testimony of John Dagenhart. Dagenhart is an electrical engineer licensed in two states. He teaches bucket safety with Clapp Research Associates, a safety firm. Dagenhart worked as an engineer for Duke Power, responsible for distribution lines. He is an OSHA expert and teaches OSHA compliance to bucket truck employees. He is a member of an ANSI committee on industrial warnings. Dagenhart has been hired in the past by current defense counsel in this case, Bill Posey and Joe

Callow, to testify in a previous trial relating to a bucket truck fatality accident involving a Mobile Tool product. He was offered by Callow and Posey to give trial testimony in that case. Dagenhart is trained in National Electrical Safety Codes and he is also a trained fire investigator. Dagenhart has worked with electrical components in multiple industrial applications and he has designed warnings for companies.

In the present case, Dagenhart was retained by Large to examine fire evidence and debris, pinpoint causation, comment on applicable OSHA and workplace rules, opine on an electrical system failure that led to a hydraulic fire, and determine proper accident avoidance in view of already-tested and accepted electrical and ANSI methods and specifications.

In its present motion to exclude testimony, Mobile Tool claims that Dagenhart is not qualified to render expert opinions regarding design and manufacture of the aerial lift, nor is he qualified to opine regarding inadequate warnings. Mobile Tool further claims that Dagenhart's proposed alternative designs and warnings have not been tested, peer-reviewed, or accepted in the relevant communities, and are thus scientifically unreliable. Mobile Tool additionally asserts that Dagenhart's proffered opinions are irrelevant because he did no analysis to prove or disprove that one of several possible causes is more or less probable than any other.

Dagenhart seeks to testify regarding probable causes of an electrical fault within the boom structure and opined that there are three probable paths. First he seeks to testify that the end cap was not installed at the factory and continued to not be in place from the time it left the factory until the time of the accident. He opines that debris may have entered the boom because of the missing end cap, providing a means of bridging the gap between the conductive band and the metallic knuckle. Second, Dagenhart seeks to testify that a hose clamp was missing from a

leveling rod, within the boom in the general area of the conductive band. Dagenhart opines that the retractile cable intended to be connected to this clamp may have thus been lying loose within the boom, providing a means of bridging the gap between the conductive band and the metallic knuckle. Third, Dagenhart seeks to testify that a coaxial cable runs from the conductive band to a monitoring point in the metallic knuckle end of the upper boom, and this coaxial cable would have provided a conductive path from the conductive band to the metallic knuckle.

Mobile Tool claims that Dagenhart's depositions expose his lack of qualifications on design and warning issues and the lack of actual work performed prior to rendering his opinions in this litigation. Mobile Tool claims that Dagenhart did not perform any testing of his alternative designs or warnings, and did not examine an exemplar TECO aerial lift. Mobile Tool makes much of the fact that Dagenhart has never designed or aided in the design of an aerial lift or any component of an aerial lift. Mobile Tool argues that Dagenhart's proposed testimony should be excluded because it is unreliable.

In Winters v. Fru-Con, Inc., 498 F.3d 734 (7<sup>th</sup> Cir. 2007), the Seventh Circuit stated:

Although testing an alternative design will likely be advantageous in demonstrating that the proposed expert's testimony is reliable, we have not mandated alternative design testing as "an absolute prerequisite to the admission of expert testimony" because the Daubert inquiry is a "flexible inquiry". Cummins, 93 F.3d at 368-69. There could be situations where the district court determines the proposed expert's testimony regarding an alternative design is reliable despite a lack of testing of the alternative design because the expert has adhered to the "standards of intellectual rigor that are demanded in [his or her] professional work", such as relying on the data generated by other researchers, making proper personal observations or taking other appropriate actions. Id. at 369 (citations omitted). The appropriateness of the proposed expert's methodology is a question for the district court in its role as a gate-keeper. "An expert must substantiate his opinion; providing only an ultimate conclusion with no analysis is meaningless." Clark v.

Takata Corp., 192 F.3d 750, 757 (7<sup>th</sup> Cir. 1999).

In response to the motion to exclude Dagenhart's testimony, Large argues that Dagenhart properly refrained from reconstruction of the accident in which Large was injured. As noted, Dagenhart has advanced three probable causes of the electrical event and resulting fire. First, he determined that the wispy coaxial cable may well have been overwhelmed by 12,500 volts of arcing current. The incident would have melted hoses with which the coaxial cable was improperly bundled, catching the freed-up fluid afire. Large argues that if the arc path burned on the metal knuckle pointed to this result, or if Dagenhart had physical access to the coaxial cable that Grabner, in his field drawing of Unit 4068, indicated to be burned out, then perhaps Dagenhart could have confirmed this theory. Dagenhart would have then had the data to reconstruct the incident.

Large further claims that Dagenhart did in fact analyze the Unit file for truck history, looked at V-5A design drawings, and looked at all available photographic and physical evidence. Large argues that without the knuckle, hoses, fiberglass and other material, Dagenhart had insufficient baseline evidence to reconstruct anything. According to Large, Dagenhart lacked the inputs from which to project the path of electrical current within the boom, the exact components compromised by the current, the source of the initial burst of fire, the identity of the fuel feeding the fire, and the course the fire took up the boom toward Large.

Large contends that the spoliation also disabled Dagenhart from any reconstruction of his other theories of defect. Dagenhart opines that the manufacturing defects of a missing hose clamp and an omitted end cap, or the possible positioning of the test band closer than two inches from the metal knuckle, may well have precipitated boom failure. Large argues that Mobile

Tool's spoliation of the key components in the fire made a cause and origin investigation difficult because Dagenhart had to form opinions through close inspection of circumstantial evidence.

Large further argues that Dagenhart has performed adequate evaluation and testing. Large points out that non-invasive analysis can be the equivalent of other forms of testing in a Daubert inquiry. Troutner v. Marten Transport, Ltd., 2006 U.S. Dist. LEXIS 88924, at \*19 (N.D. Ind. Dec 5, 2006)(noting that the challenged expert "also applied scientific methodology in his inspection of the trailer door and visual examination of the failed grabber, i.e., a nondestructive evaluation"). Large notes that Dagenhart went to the scene in Danville, Virginia. Dagenhart also looked at the 4068 unit file. Dagenhart based his opinions in part on the documents in the Unit file, including field investigation materials (Grabner's field notes and Jeff Sellers' insurance investigation). Dagenhart also looked at photographs, TECO V-5A designs and manufacturer's manuals. Dagenhart further obtained and evaluated exemplars of the retractile cable clamp, the retractile cable, and the coaxial cable connected to the test band. Large argues that based on his observation of this material, it was apparent to Dagenhart that there were three probable causes of the fire. As noted above, one was a design problem with the location and strength of the coaxial cable, and two were manufacturing defects – the improper attachment of dissimilar metals at the retractile cable coupling, or absence of a cable clamp altogether, and the potential bridging of the insulation gap by debris fallen down the open throat of the boom.

Large argues that Dagenhart did not have to run a 12.5 kV current over a flopping retractile cable to see if the cable would carry the current before melting because from his

experience, study and training, Dagenhart knew the thin coaxial cable would conduct current but melt under the extreme heat generated by a 12.5 kV arc. Large further argues that Dagenhart was not able to test the impact of debris wedged between the metal knuckle and the test band apparatus, because without the knuckle and boom remnants too many questions would abound for this to be practical. Large points out that experts do not have to set up specific testing regimes to prove they have used methodology. Rather, they can discern conclusions from data, drawings, photographs and material that means something to learned people. Experts may rely “on the data generated by other researchers, making proper personal observations, or taking other appropriate actions.” Winters v. Fru-Can Inc., 2007 U.S. App. LEXIS 19919 at \*16-17 (7th Cir. Aug 22, 2007). Reference to any testing to show the efficacy of a methodology validates the methodology. Smith v. Ford Motor Co., 882 F. Supp. 770, 775 (N.D. Ind. 1995).

Large next argues that Dagenhart adequately considered and dismissed other potential causes. Dagenhart examined the records in the Unit file that Mobile Tool kept on the leased vehicle. He looked at the repair records produced in response to discovery. He saw records from various vendors Mobile Tool employed to fix the truck at times. Large states that if Mobile Tool has evidence of other accidents, incidents or occurrences that weaken Dagenhart’s evaluation of the accident, then Mobile Tool can cross-examine Dagenhart at trial.

Large further argues that Dagenhart properly evaluated alternative prevention options. Dagenhart opined that Mobile Tool could have prevented the arcing and fire by installing the gradient shield made mandatory by Figure 2A of the ANSI standard. According to Large, Figure 2A is already equipment mandated for category B buckets such as Unit 4068. Mobile Tool did not install the gradient shield, which Large argues would have kept the 12.5 kV line from



touching the test band on the date of Large's accident. Large states that ANSI standards indicate that all Category A bucket trucks rated for 138 kV or less are supposed to have gradient shields installed over the test band. Category A buckets are routinely used to perform distribution work. Unit 4068 was rated to withstand 69 kV, so it was in the category for which the ANSI rules compelled the use of a gradient shield. Large claims that if Mobile Tool had fully followed Figure 2A, the current from the distribution line would have coursed through the shield, instead of the test band itself, and been carried right to the fiberglass upper boom to which the shield is attached.

Dagenhart also suggested that Mobile Tool could have installed simple circuit breaker-type fuses in the test band apparatus. The fuse Dagenhart recommended is made of plastic and is already ANSI tested and approved for use. The fuse would have blown when the 12.5 kV contacted the test band, diverting the current path and stopping the electrical event. Finally, Dagenhart suggested that Mobile Tool could have routed the coaxial wire away from the hydraulic hoses, instead of bundling the coax with the hoses. According to Dagenhart, if ANSI had tested the test band, or if Mobile Tool had discharged its duty to do so, then they would have readily discerned the risk of fire incumbent in bundling with hydraulic hoses a conductive and coaxial wire that Mobile Tool used to connect it to a metal test band in proximity on a regular basis to 12,500 volts of current.

Large agrees that experts are always compelled by Daubert to test "novel" techniques, theories and designs. When the suggested design is already in place, however, and incorporates well-known or well-tested technology, or deploys common sense methodology, then the expert witness need not have tested the design. Smith, 882 F. Supp. at 776. Large argues that

Dagenhart (an ANSI committee member) stayed within ANSI-approved technology in arranging his suggestions for preventative measures.

This court agrees with Large that Dagenhart's methodology is sufficiently reliable to permit him to testify. Dagenhart's expected testimony has an adequate foundation and scientific explanation, and is not mere speculation. While Dagenhart has obviously been limited in his ability to draw concrete conclusions regarding the cause of the accident due to the destruction of parts of the boom, Dagenhart has nevertheless submitted well-reasoned and scientifically supported conclusions and proposed alternative designs. To the extent that Mobile Tool believes Dagenhart's conclusions and alternatives are incorrect, Mobile Tool may cross-examine Dagenhart and expose any flaws in his testimony to the jury. Walker v. Soo Line Railroad Co., 208 F.3d 581, 586-87 (7<sup>th</sup> Cir. 2000)("vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means" of countering expert testimony)(quoting Daubert, 509 U.S. at 596).

Next, the court will consider Mobile Tool's motion to exclude the testimony of John J. Brewington. Brewington seeks to testify regarding the probable causes of the electrical short that occurred, design and manufacturing defects of the aerial lift, and proposed warnings for the aerial lift. According to Large, Brewington will opine that Mobile Tool should have appreciated the danger in installing a conductive test band on an otherwise insulated part of the boom. Brewington will opine that the industry was warning for decades of these latent dangers, through warning decals and messages designed to educate the operator, yet Mobile Tool did not provide these warnings. Brewington will also opine on matters relating to bucket operation and manufacture that are not apparent to lay jurors.

Brewington has extensive experience managing, maintaining and improving bucket trucks and interacting with the professionals that use them. While at Pike Electric, Brewington led a task force that approached manufacturers with concerns about warnings, manuals and aerial lift functioning. Most of these dealings were with bucket truck manufacturer Hi-Ranger. Brewington became a member of several ANSI committees, including A92.2, A92, A10.31 Digger Derrick Committee and Z15.1. Brewington has aided in the design of bucket trucks, including hydraulic systems. Brewington has also opined on safety manuals and supervised work on dielectric tests on buckets.

As part of his ANSI warnings work, Brewington has been an advocate for a standard by which manufacturers would consistently warn employees that parts of an insulated boom can be conductive, putting the operator's safety at issue. Leading aerial lift manufacturers Holan, Hi-Ranger and TECO have in the past warned operators of the distinction between insulated and non-insulated parts of the upper boom by using a "band of arrows." Hi-Ranger provided this warning on aerial lifts as far back as 1969. This decal, affixed to the upper boom at the knuckle end, would consist of arrows pointing out that the boom was not insulated beyond the arrows brightly encircling the boom. Test bands would be clearly demarcated as non-insulated under this warning system. Brewington has seen product literature from Holan containing a band of arrows, which literature was dated 1990 and 1996.

According to Large, TECO made the decal warning system a purchaser's option. Holan and TECO became part of Mobile Tool by the late 1990's, so Mobile Tool was well-acquainted with the insulation warning systems. With regard to the TECO V-5A that Large was operating on June 19, 2000, TECO/Mobile Tool were the owners of the machine continuously from its

manufacture in 1996 to large's date of injury. Thus, Mobile Tool picked the options, warnings and display.

Brewington intends to testify that in addition to visual decals, several manufacturers have for many years expressly warned of contact with uninsulated portions of the booms, such as the area where the test band would be affixed to the upper boom. One such decal declared "Danger. Boom is not insulated beyond arrows. Avoid contact with energized lines."

In support of its motion to exclude testimony, Mobile Tool first argues that Brewington is not qualified to offer opinions regarding the design and manufacture of the subject aerial lift, nor is he qualified to offer opinions regarding appropriate warnings for the aerial lift. Mobile Tool states that it is undisputed that Brewington has never designed an aerial lift nor aided in the design of a component of an aerial lift, has never worked for an aerial-lift manufacturer, and has never conducted any studies to determine the efficacy of warnings or operator's manuals on people who do not read manuals or warning decals.

Mobile Tool further argues that Brewington's proposed testimony regarding the end cap and the boom's internal components is unreliable. Mobile Tool claims that Brewington did not do any testing, analysis, experiments or calculations, did not look at any TECO V5 models to form any of his opinions, did not do any testing, experiments, analysis, or other investigation to attempt to recreate the path of electricity travel through the two phases and through the unit, did not look inside of a V5A unit to see how its test bands and coaxial cables are run, did not do any analysis, investigation, testing, or experiments to determine whether there was an electrical arc that punctured a hydraulic line or which ignited hydraulic oil flowing through the lines resulting in an oil fire. Mobile Tool further claims that Brewington did not conduct any investigation to

determine if the installation of the test band, coaxial cable, and associated equipment on a TECO V5A was substantially identical to that done throughout the industry when the device was manufactured, did not conduct any testing or experiments to determine which theories regarding the cause of the fire was more probable than any others. Mobile Tool notes that Brewington seeks to testify that “there is no evidence that the manufacturer had anything in place to assist Mr. Large in exiting the platform” even though Brewington cannot point to any manufacturer who has anything in place to assist an operator to exit the platform under these types of circumstances. Mobile Tool also claims that Brewington did not conduct an inspection, analysis or calculation regarding whether the arc path on any internal component would have survived a hydraulic fire. Mobile Tool notes that Brewington seeks to testify that two energized phases of the 12.5kV main line came in close proximity or touched the top of the fiberglass upper boom of the aerial device, yet Brewington has never conducted any investigation or analysis to determine the distances over which 12.5kV lines can arc near but not on a boom.

Mobile Tool concludes that Brewington has failed to test his opinions and failed to utilize any other method of research to compensate for his lack of testing. Mobile Tool claims that Brewington has provided no evidence that his theories have been favorably subjected to peer review or generally accepted in the relevant community.

Mobile Tool also argues that Brewington’s proposed testimony regarding warnings is unreliable and, therefore, irrelevant. As noted, Brewington seeks to testify that there should have been labels or warnings to differentiate between insulated portions of the upper boom and those portions interconnected electrically. Brewington also seeks to testify that there should have been a warning to turn off the ignition of the bucket truck in case of a hydraulic oil fire.

Mobile Tool argues that Brewington could not identify any ANSI standard which requires a warning or placard differentiating between insulated portions of the upper boom and noninsulated portions. Nor did Brewington conduct any research to determine when any manufacturer began to offer a warning decal with respect to where the insulated or noninsulated parts in an aerial lift were located at the time the TECO unit was manufactured. Brewington has also never seen any written warning from any aerial lift manufacturer warning operators to shut off the truck engine in case of a hydraulic oil fire. Brewington could not point to a single aerial lift manufacturer who provides a warning to operators to shut off the truck engine in a case of hydraulic oil fire. Thus, Mobile Tool concludes that Brewington's failure to test his proposed warnings renders his opinions regarding inadequate warnings unreliable and irrelevant.

In response to the motion to exclude Brewington's testimony, Large notes that Brewington read the Unit file, examined discovery documents, looked at product manuals, examined Unit 4068 photos, researched warning history at other manufacturers, and evaluated bucket truck function. Large argues that this type of engaged analysis is respected as a form of testing in a Daubert inquiry. Troutner, supra. Large points out that Brewington faced some of the same obstacles in this case that impaired Dagenhart and other plaintiff experts. The 4068 unit file was produced by Mobile Tool two years after Large first asked for it in discovery and after the discovery cut-off in this case. Brewington stated repeatedly in his deposition that the absence of physical evidence like the boom, knuckle, hydraulic hoses, retractile cables, and other parts of Unit 4068 prejudiced him. Large states that Brewington was careful to indicate that he was forced into extending his logic and assumption in certain points of the case on account of the absence of information. Large points out that experts may rely "on the data generated by other

researchers, making proper personal observations, or taking other appropriate actions.” Winters, supra.

Large further argues that Brewington adequately considered and dismissed other potential causes. A long-recognized version of the scientific method is the process of elimination. Large contends that the test is not whether Brewington ruled out every other variable or form of circumstantial evidence, but whether Brewington “offered ‘no explanation’ as to why he concluded an alternate cause was not the sole cause” of an accident. Troutner, supra, at \*15. Again, Large notes that Brewington examined the records in the Unit file that Mobile Tool kept on the leased vehicle, and looked at the repair records produced in response to discovery. Brewington also saw records from various vendors Mobile Tool employed to fix the truck at times, yet nothing pertinent turned up. Brewington stated he did not expect maintenance or repair in the leveling rods in the upper boom, and testified that the Mobile Tool manual suggested the leveling system was supposed to be permanent. Large notes that there is no record of a defect in the leveling rod in the upper boom and that if Mobile Tool has evidence of damage of this nature, that would make for interesting cross examination. Likewise, states Large, if Mobile Tool has evidence of other accidents, incidents or occurrences that weaken Brewington’s evaluation of this accident, then Mobile Tool can cross examine Brewington accordingly at trial.

This court finds that Brewington’s proposed expert testimony passes Daubert’s reliability test. Brewington’s opinions are supported by adequate foundation and are not mere speculation. To the extent that Mobile Tool believes that Brewington’s conclusions are weak or incorrect, Mobile Tool may cross-examine Brewington on these points. Walker, supra. Clearly, Mobile Tool’s objections to Brewington’s opinions go to the weight to be given to the opinions and not

their admissibility. Thus the court will not, at this time, exclude Brewington's testimony.

The court will next address Large's motion to exclude the expert testimony of Dr. Charles R. Manning. Manning's testimony will be presented to support Mobile Tool's argument that the presence of an end cap would have squelched the fire, thus allowing Large to escape the bucket to safety the day of the fire. Specifically, Manning's opinion is that:

Testing by ARAI on the end cap showed that the fiberglass, even with a constant torch flame on the inside for 10 minutes, does not breach the integrity of the cap. And it would have lasted over 20 minutes under constant fire. With the cap on, the oxygen would have been used up in the boom, and the fire would have gone out in a short time, leaving Mr. Large uninjured.

Manning Report, at p.5, ¶ 4.

Manning's opinion, elaborated upon in his deposition, is as follows:

1. The arc pierced a small hole in a hydraulic hose adjacent to the test band.
2. The pressure on the hydraulic line forced the fluid out of the small hole in the hose and shot it over fourteen feet through the boom, to the end of the boom where the end cap was supposed to be.
3. The fluid "atomized" while in transit in the air, mixing with oxygen so as to cause a hot, oxygen-fueled fire in the boom.
4. The hole in the hose had to be small because fluid running out a wholly-severed line would not have first atomized and then ignited and also, if not pressurized through a small hole, would not have projected more than 14 feet away to the end cap area of the boom.
5. The fluid-sloshed hoses and soaked fiberglass walls of the boom did not perpetuate the fire; it was fueled solely by the atomized fluid projected from the hose pierced by the arc.
6. There were no air outlets in the bucket area of the boom that would have permitted the fluid to keep burning, so the fire would have gone out but for the air available at the uncapped throat of the boom.
7. Thus, if an end cap was on the boom, the fire would have gone out and large



would not have been injured on account of the test band contact with the distribution line.

Large argues that Manning's theory is rank, untested speculation. Large contends that even if there was an end cap present on the date of the accident, Mobile Tool cannot conclude that the fire would have been extinguished by that cap. Large insists that if the end cap was there to suppress air flow at the cap end of the boom, the fire could still have burned hot and long right at the fire's ignition source – the knuckle end of the boom. Large argues that there was in fact fuel present at the knuckle end in the form of the hydraulic fluid, soaked hoses and the flammable fiberglass itself. Large further argues that there was ample air at the knuckle end and that Manning admitted that the knuckle end of the boom is open by design. Manning also conceded that there would be "localized burning" at the knuckle end, even with an end cap.

Large contends that Manning made up several facts in order to support his conclusion that the presence of an end cap would have knocked out the fire before Large was injured. Manning assumed a small hole in the hose, not a large one. A large hole would have completely negated his theory that pressurized fluid traveled fourteen feet or more from the ruptured hose to the area of the end cap, and negated his assumption that the fluid vaporized and spewed fire to the cap end of the boom. Large argues that Manning had no basis for assuming that the hole in the hose was small, because he never saw the hose. Manning has not pointed to any pictures showing a small hole in the affected hose. Manning did not reconstruct a 12,000 volt contact with an exemplar test band to determine the resultant hole size in the hydraulic hose. Manning, in fact, admitted in his deposition that he "[did not] know how the – the opening in the – hydraulic hose was." Manning Dep. at 189.

Large further contends that Manning assumed that the small hole was made in the hose

by the effect of heat from the arc interacting with “steel reinforcements” in the hydraulic hose. Large points out that the Mobile Tool manual for the TECO V5A expressly bans metal reinforced hoses from insulated bucket trucks because they can conduct current and electrocute operators. (MTIV5A Operations Maintenance and Parts Manual at p. 2). Large points out that if Mobile Tool put metal hoses in the bucket truck, that would be a serious admission opening Mobile Tool up to extremely serious consequences.

Large next points out that Manning assumes that there was no source of air other than the open throat of the boom at the end cap. Large argues that such an assumption is wrong. Dagenhart testified at the June 2007 sanctions hearing that the tool hoses emerge from the boom into the bucket, an obvious passageway for air. Large further points out that there are clearly visible in photos other openings besides the end cap in the upper boom area, which are all sources of air in addition to the open boom channel.

Large next argues that Manning’s proposed expert opinion is based on an analysis that failed to simulate the factors, variables, and conditions that caused the fire. Large notes that it is both common sense and a universal principle of law that, to be a reliable basis for an expert opinion, the reconstruction of an accident must accurately simulate as many of the actual variables, factors, and conditions that were present and/or existed at the time of the accident as possible. Silbernagel v. Voss, 265 F.2d 390, 392 (7<sup>th</sup> Cir. 1959)(“we cannot say that there is such a similarity between the [expert’s] experiment and the occurrence in the case before us to find reversible error in the exclusion of the [expert] testimony.”); Robb v. Burlington N. & Santa Fe Ry. Co., 100 F. Supp. 2d 867, 874 (N.D. Ill. 2000)(excluding testimony from defendant’s accident reconstruction expert who ran an experiment under non-comparable conditions in a case

involving a railroad accident, amounting to “a reconstruction of unexplained value”). Courts recognize that “evidence of an experiment made out of court is allowable only when there is substantial similarity between conditions existing at the time of the occurrence giving rise to the litigation and the conditions created in the experiment.” Lopez v. Foremost Paving, Inc., 796 S.W.2d 473, 480 (Tex. App. 1990).

Large argues that Manning did not get an exemplar V5A boom with an end cap, pressuring to standard a V5A hydraulic line, piercing the line with 12,000 volts of current from an arc to an adjacent test band mechanism, and then determining if the end cap put out the fire. Instead, Manning skipped all the reconstructive steps, and trained a blow torch on an exemplar end cap. After ten minutes, Manning concluded the end cap itself did not melt under the torch flame, and then concluded that an end cap would have permitted no fire to pass on the date of the accident.

Large argues that Manning’s experiment bears no relationship to science. Manning conceded that it was “heat” that melted fiberglass, not necessarily the flame of a fire. Yet, Manning did not test the effect of heat in an enclosed tube on the end cap and surrounding fiberglass; he just toyed with the cap and a flame in the open air. Manning included no hydraulic fluid in the experiment, just a torch, and he ran the test three or four feet off the ground, not thirty feet. Manning did not even try to assume at what temperature the fire really burned on the date of the accident, a fire so hot that it melted the fiberglass bucket. Thus, Large concluded that Manning’s failure to substantially simulate the conditions that existed at the time of the accident on the date of the accident renders his opinions inadmissible.

In response to the motion to exclude testimony, Mobile Tool argues that Daubert does

not authorize a trial court to determine the correctness of an expert's conclusions. "The rejection of expert testimony is the exception rather than the rule" and the trial court's role as gatekeeper is "not intended to serve as a replacement for the adversary system." Advisory Committee Notes to 2000 Amendments to Rule 702; Sachs v. Reef Aquaria Design, Inc., 2007 WL 3223336 at \*2 (N.D. Ill. 2007). Although the court must determine whether requirements of Rule 702 and Daubert are met, the Seventh Circuit has cautioned that "vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means" of countering expert testimony. Walker v. Soo Line Railroad Co., 208 F.3d 581, 586-87 (7<sup>th</sup> Cir. 2000)(quoting Daubert, 509 U.S. at 596).

Mobile Tool argues that Manning's assumptions are based on his many years of education and experience. Manning testified that "hydraulic fluid will not burn. No liquid will burn. Only a vapor burns." Manning further explained that "pressure will vaporize fluid" and that "if it's a small orifice, it wants to vaporize. If it's a big orifice, it wants to come out as a fluid." Thus, Mobile Tool concluded that Manning drew upon his experience and expertise to conclude that the hole in the hydraulic hose must have been small, because only vapor burns, and only a small hole (rather than a large hole) in the hose could have vaporized the hydraulic fluid, thereby causing the hydraulic fire. Thus, Mobile Tool concludes that Manning's opinion is based upon scientific principles and his experience, not untested assumption.

With respect to Large's contention that Manning "assumes that there was no source of air other than the open throat of the boom at the end cap", Mobile Tool contends that Manning based this conclusion on his review of photos of the bucket truck, his inspection of an exemplar TECO Vanguard, and his thirty years of experience working with bucket trucks. Mobile Tool

points out that Manning testified that he did not need to see the hose or the debris to confirm his opinions – and that evidence is often not available in fire investigations. Mobile Tool concludes that any question regarding the issues raised by Large goes to the weight of Manning’s testimony and not to its admissibility.

Mobile Tool also argues that Manning’s proposed expert opinion regarding the end cap is based on reliable methodology. Mobile Tool contends that there is no authority for the position that Manning’s testing of the end cap was required to simulate the conditions that existed at the time of the accident. Mobile Tool states that Large’s objections makes this an area of cross-examination, not exclusion.

Mobile Tool notes that Manning testified extensively regarding his end cap testing and produced a DVD of the testing as well. Mobile Tool points out that Manning conducted the testing with a “propane high temperature” torch, that produced heat of over 2,500 degrees. Manning further testified that he did not include hydraulic fluid in the experiment because it was not necessary to do so – applying the torch directly on the end cap “would be more severe” than the burning of hydraulic vapor. Mobile Tool argues that Manning drew upon his experience and expertise in drawing this conclusion. Thus, Mobile Tool argues that Manning’s conclusions are not assumptions, but that they are conclusions that he based on his expertise and many years of experience in accident reconstruction and fire investigation. As the Supreme Court recognized in Kumho, an expert is permitted to “draw a conclusion from a set of observations based on extensive and specialized experience.” 526 U.S. at 156.

This court finds that there is no basis in the record to exclude Manning’s proposed expert testimony. If Large believes that Manning’s conclusions are not fully supported by his analysis

and testing, then he may cross-examine Manning on these points. Large's objections go to the weight to be given to Manning's opinions and conclusions and not their admissibility. Thus, the court will not, at this time, exclude Manning's testimony.

Conclusion

Based on the foregoing, the motion to exclude the testimony of Melberg, the motion to exclude the testimony of Dagenhart, the motion to exclude the testimony of Brewington, and the motion to exclude the testimony of Manning, are all hereby DENIED.

Entered: December 27, 2007.

s/ William C. Lee  
William C. Lee, Judge  
United States District Court